

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

# RESERVE COPY PATENT SPECIFICATION

692,051



Date of Application and filing Complete Specification: Dec. 7, 1950.

No. 29968/50.

Complete Specification Published: May 27, 1953.

Index at acceptance:—Classes 61(ii), A3b; and 138(i), S2.

## COMPLETE SPECIFICATION

### Improvements in Window Cleaners

I, JOHN HARALD ALMLÖF, of Varberg, Sweden, a Swedish subject, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to improvements in window cleaners.

My invention comprises a window cleaner cheap to manufacture and easy to handle which will essentially facilitate the cleaning of a window pane without the necessity of a washing of the same, and will at the same time remove the microscopical unevennesses of the pane thus reducing the possibility of dust adherence.

The present invention consists therein that the window cleaner is a hand plane device adapted to plane the pane by means of a thin flexible knife blade carried by a handle and elastic means resting on the upper side of the blade so that the blade edge will bend and follow close to the concave shape of the pane caused by the blade pressure during cleaning.

In the accompanying drawing:

Fig. 1 is a front view of the device;  
Fig. 2 is a side view thereof;  
Fig. 3 is a side view of the forward end of the device working on a window pane;

Fig. 4 is a plan view of the forward end of the device seen from above working on a window pane;

Fig. 5 is a cross-sectional view of the forward end of the device in another embodiment, and

Fig. 6 is a similar cross-sectional view of the same with a cover plate in changed position.

The device consists of a knife support plate 1 provided with a handle, the

support plate carrying a thin flexible knife blade 3 along a cross-directed front edge 2 so that the device has a plane-like shape. Said edge portion 2 of the support plate is preferably chamfered as seen in Fig. 3, the knife edge reaching beyond the support edge in parallelism therewith. The knife is protected by a cover plate 6 and between the knife and this cover plate there are inserted one or more elastic means such as springs, rubber strips or such like, preferably a rubber strip 5, the knife, rubber strip and cover plate being held in position on the support plate by means of screw-nut devices 4 attached to the support plate. The cover plate reaches somewhat beyond the knife edge and is here bent backwards from the knife in order not to be a hindrance for the elastic curve-like back-bending of the knife edge during the planing work against the window pane 7 and also serves as a stopper against the window sash and so protect the knife edge. The rubber strip 5 does not reach forward to said knife edge but leaves the same free in the same way as the support plate edge as seen in Fig. 2.

In the embodiment of Figs. 1 to 4 the side edge portions of the cover plate 6 reach beyond the side edges of the knife blade to protect the hand of the operator from contact with the thin knife. In the embodiment of Figs. 5 and 6 said side edge portions 9, 10 of the cover plate 6 are bent down to cover the side edges of the blade. Furthermore, the back edge 8 of the cover plate is also bent down in such a way that said back edge, when the cover plate is turned through 180° as seen in Fig. 6, will protect the front edge of the knife from contact with the hand when the cleaner is not in use.

When in use to clean a window pane 90

the cleaner is moved along the pane like a hand plane. By the pressure of the knife against the pane the surface of the pane will be made slightly concave but the knife blade will thoroughly follow the pane curvature as seen in Fig. 4 on account of the flexibility and the elastic resting of the blade on the rubber strip. During the cleaning the pane may preferably be in a dry state.

During the plane-like movement the knife blade is cutting off all dirt and dust from the pane surface and it is found that the pane will be made bright, transparent and lustrous without any polishing. Microscopical projections in the pane surface are cut off and as a result it is more difficult for dust and rain to adhere to the pane, and the cleanliness will last longer. No washing and polishing of the window pane is necessary, and it is easier to maintain the pane in a state of cleanliness.

I do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

What I claim is:—

1. A window cleaner consisting of a hand plane device adapted to plane the pane comprising a thin flexible knife blade carried by a handle and elastic means resting on the upper side of the blade for permitting the blade edge to bend and follow close to the concave shape of the pane caused by the blade

pressure during cleaning.

2. A window cleaner according to claim 1, characterized therein that the device comprises a handle-provided support plate carrying the thin flexible knife blade, the edge of which is cross-directed with reference to the planing direction and reaches beyond the front edge of the support plate, a cover plate detachably attached to the support plate and holding the blade in position, the elastic means being inserted between the cover plate and the blade.

3. A window cleaner according to claim 2, characterized therein that the elastic means consists of a rubber strip resting on the upper side of the blade.

4. A window cleaner according to claim 2 or 3, characterized therein that the front edge of the cover plate lying in the vicinity of the blade edge is bent backwards so as to be of no hindrance for the bending of the blade during cleaning.

5. A window cleaner according to claim 2, 3 or 4, characterized therein that the back edge of the cover plate is bent down so that it will protect the blade edge when the position of the cover plate is turned through 180°.

6. A window cleaner according to claim 4 or 5, characterized therein that the side edges of the cover plate are bent down towards the blade into positions to cover the side edges of the blade.

MARKS & CLERK.

FIG. 1

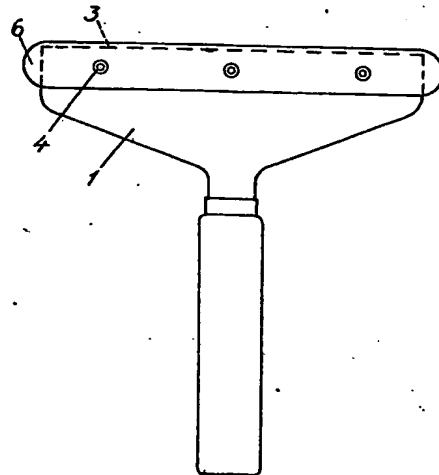


FIG. 2



FIG. 3

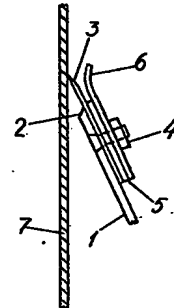


FIG. 4

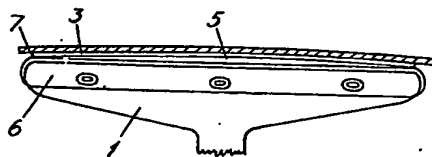


FIG. 5

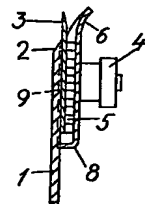


FIG. 6

